

EXPLICITLY REJECTING AN IMPLICIT DICHOTOMY: AN INTEGRATION OF
TWO CONTRASTING APPROACHES TO ASSESSING DEPENDENCY

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ABSTRACT

Explicitly rejecting an implicit dichotomy: An integration of two contrasting approaches to assessing dependency

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Proponents of self-report and projective assessment traditions have approached the assessment of interpersonal dependency quite differently, in ways that are only recently becoming more aligned. The present study aimed to address the increasing convergence between the two sides, administering both self-report measures and a newly developed implicit measure of dependency in an attempt to characterize more precisely the relations between these seemingly disparate approaches. The study was moderately successful in validating the implicit measure using criteria proposed by two independent groups (Asendorpf, Banse, & Mucke, 2002; Bornstein, 2002). The implicit measure was found to be reliable, orthogonal to two self-report dependency instruments, and predictive of external criteria such as other personality constructs and past depression. This success, however, was hampered by the study's inability to replicate prior findings using a task assessing help-seeking, identified as a behavioral indicator of dependency. All implicit and self-report dependency indices were unrelated to all measures of help-seeking, which prevented any further analyses; potential explanations for the failure of this task are proposed in the Discussion. This study also provided an examination of dissociations between participants' scores on self-report and implicit measures of dependency, and has implications for the significance of such dissociations. That is, the possibility that dissociations themselves are pathological was not supported, and it was found that

dissociations between self-report and implicit dependency scores were associated with different patterns of responding on a broadband personality instrument. Finally, the present study offered additional evidence for the relation between dependency and depressive symptomatology, and further identified implicit dependency as contributing unique variance in the prediction of past major depressive episodes.

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CHAPTER 1

INTRODUCTION

Dependency (di pen'den sē), n.1. "Impairment in object representation...and a need to maintain direct physical, sensory, need-gratifying contact with the object. The danger is the loss of the object and the need satisfaction it can provide" (Blatt, 1974, p. 149). 2. Characteristic of individuals who "see themselves as inherently inadequate and helpless and, therefore, unable to cope with the world on their own...They conclude that the solution to the dilemma of being inadequate in a frightening world is to try to find someone...who will protect and take care of them" (Beck, Freeman, Davis, & Associates, 2004, p. 275).

Although two definitions are given for excessive interpersonal dependency, any dictionary worth its salt would surely not print both for fear of redundancy. The first definition, taken from an object relations framework, and the second, from a cognitive perspective, are clearly divergent in their language and etiological accounts, but become remarkably aligned in their descriptions of, and predictions for, the dependent individual. Both models view interpersonal dependency as a universal feature of humanity, one that becomes maladaptive when reaching the excessive levels depicted above.

Dependency has long been central in clinical theory (e.g. Beck, Rush, Shaw, & Emery, 1979; Blatt, 1974; Bowlby, 1980; Fenichel, 1945; Horney, 1945) and research (for reviews, see Blatt & Zuroff, 1992; Bornstein, 1992; Coyne & Whiffen, 1995; Nietzel & Harris, 1990), as well as an important construct in the personality and social psychological literatures (for reviews, see Bornstein, 1992, 1993). Dependent individuals have been conceptualized as being highly sensitive to events in interpersonal relationships, relying on others to provide a sense of well-being,

having a strong need to keep in close contact with others, experiencing deep longings to be loved, cared for, nurtured, and protected, fearing rejection, separation, abandonment, and loneliness, and having difficulty expressing anger for fear of losing others' support (Blatt, 1974; Blatt & Zuroff, 1992).

Given this portrait of the dependent individual, the clinical relevance of excessive dependency becomes rather transparent. However, despite the seemingly ready application of excessive dependency to a variety of clinical issues, the literature at large is surprisingly sparse (e.g., eating disorders), inconsistent (e.g., depression; for detailed discussion, see Coyne & Whiffen, 1995), or both (e.g., substance abuse). One hypothesis for why this may be the case is that the approaches used to assess individual differences in dependency are problematic. This possibility was lent credence, and perhaps partially addressed, by factor analytic studies conducted on one of the most widely used self-report measures of dependency, the Depressive Experiences Questionnaire (DEQ; Blatt, D'Afflitti, & Quinlan, 1976).

Two independent groups of researchers using divergent methodologies came to similar conclusions; that the dependency factor of the DEQ is more meaningfully interpreted when distilled into two subfactors (Blatt, Zohar, Quinlan, Zuroff, & Mongrain, 1995; Rude & Burnham, 1995). These two subfactors were labeled by Rude and Burnham as "connectedness," a more adaptive form of dependency, and "neediness," a more maladaptive form. Little empirical validation has emerged in support of this newer conceptualization of dependency, but what has emerged has been supportive. Neediness, and not connectedness, was demonstrated to correlate with concurrent depressive symptomatology (Rude & Burnham, 1995), and has been

identified as a stable risk factor for major depressive episodes in a prospective study (Cogswell, Alloy, & Spasojevic, 2006).

Although this alternative conceptualization of dependency is potentially a reason for encouragement, there remains a nagging issue that extends into all areas of personality assessment, one which must be confronted in order to assert confidence in our chosen approach to the measurement of any construct. Beginning with Freud, continuing with Mischel (1972), and later, McClelland, Koestner, and Weinberger (1989), is the issue of whether individuals have the capability, insight, and willingness to accurately report their inner states. It is this line of inquiry that has largely given rise to the dichotomy alluded to in both the title and initial "definitions" provided in this manuscript; that is, a split into two primary traditions of personality assessment, one heavily relying on self-report measures, the other on more indirect ones. Plainly, adherents to the self-report approach claim that such inner states are relatively more accessible, whereas supporters of the indirect approach argue that they are relatively less accessible. Accessibility has come to refer to both an individual's willingness and ability to accurately characterize one's inner experience. Throughout this dissertation, direct measures (most commonly self-reports) and indirect measures (in the present examples, projective techniques) will be treated as if they exist on opposing sides of a real dichotomy. It is important to note, however, that the dichotomy is used in this paper to reflect the standard language in the literature (i.e., direct vs. indirect, objective vs. projective, explicit vs. implicit), though it is more likely that a given assessment tool falls along a direct-indirect continuum instead of occupying a "pure" position at one pole or the other. Although referring to

dichotomies makes communication easier, it is crucial to avoid reifying the dichotomy by forgetting that it has been artificially created as a pragmatic device.

The measurement of dependency has come to the forefront in discussions of this split, with a number of recent papers attempting to find use for both self-report and projective measures of dependency (Bornstein, 1998, 1999, 2002; Bornstein, Bowers, & Robinson, 1995). Drawing heavily on the work of McClelland and colleagues (1989), Bornstein (1998) argued for differentiating "self-attributed" (self-report) from "implicit" (projectively measured) needs for dependency. Self-attributed dependency refers to those components of dependency that an individual has the ability and willingness to reveal. Conversely, implicit dependency needs are postulated to exist outside of awareness, but still function to influence behavior.

In practice, self-attributed dependency needs are predictive of dependent behaviors when individuals are made aware of dependency's relevance in a given situation. Implicit dependency needs, on the other hand, are hypothesized to be more predictive of spontaneous dependent behavior. For example, Bornstein (1998) found that scores on the self-report Interpersonal Dependency Inventory (IDI; Hirschfeld, Klerman, Gough, Barrett, Korchin, & Chodoff, 1977) better predicted help-seeking behavior in the laboratory when participants were informed that the purpose of the study was to uncover the relation between dependency and help-seeking. Further, scores on the Rorschach Oral Dependency scale (ROD; Masling, Rabie, & Blondheim, 1967) were more predictive of "spontaneous" or uncued help-seeking; that is, when participants were not informed about the nature of the study.

A similar distinction between self-report and implicit assessment has emerged in the social psychological literature, particularly in the domain of attitude research (for a theoretical discussion of this issue, see Wilson, Lindsey, & Schooler, 2000). The recognition that individuals may be unwilling, or unable, to accurately report attitudes towards various objects has given rise to a number of techniques for measuring implicit social cognition. The most common of these tools is the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998), a computer-based measure of associative strength between an attitude object and an evaluative dimension. For example, to assess evaluative associations with flowers versus insects, participants would first categorize flower words and pleasant words on one key, and insect words and unpleasant words on another key. In a subsequent phase of the task, the instructions change such that participants categorize pleasant words with insect words, and unpleasant words with flower words. The IAT's overall score reflects the difference between mean response times obtained during these two stages. Participants responding more quickly when flower and pleasant (and insect and unpleasant) are categorized together than when flower and unpleasant (and insect and pleasant) are together are demonstrating a preference for flowers over insects. The IAT has been used successfully as an indirect measure of racial attitudes, picking up on racial biases that were not acknowledged on self-report questionnaires (Greenwald et al., 1998).

More recently, use of the IAT has been extended beyond attitude measurement into the domain of self-esteem and self-concept. Greenwald and Farnham (2000) successfully adapted the IAT to derive meaningful indices of implicit

self-esteem as well as implicit masculinity-femininity. Scores on implicit self-esteem buffered against negative affect following a failure manipulation, and implicit masculinity-femininity scores were more aligned with known differences between men and women than were self-reported (termed "explicit" in this literature) gender self-concept scores. Additionally, an IAT-derived index of shyness was shown to better predict spontaneous shy behavior than was an explicit measure of shyness, whereas explicit shyness was more predictive of controlled shy behavior (Asendorpf, Banse, & Mucke, 2002). Similarly, the IAT has been adapted to assess anxiety, and was demonstrated to account for variance in experimenter-rated anxiety and performance deficits following a failure manipulation, beyond variance accounted for by self-reported anxiety (Egloff & Schmukle, 2002).

Given the confluence of Bornstein's work with explicit versus implicit dependency and recent findings using the IAT to assess explicit versus implicit facets of self-concept and personality, it is reasonable to speculate about how the two lines of inquiry differ, and where they could be more clearly unified. The primary difference is a theoretical divergence between Bornstein's and the IAT's conceptualization of the nature of "implicit" process. As Bornstein has written from an object relations framework, he (1996) has moved away from the classical psychoanalytic understanding of dependency as being rooted in an oral stage fixation, but still views dependency strivings as a predominantly *unconscious* process. Conversely, IAT supporters reject the analytic notion of an unconscious, presumably due to the traditionally motivational implications of such a model; for example, that the dependent person has repressed his or her needs for dependency in the face of an

unsupportive environment. The IAT does, of course, rest on the assumption that implicit process occurs relatively *outside of awareness*, but assumes so from a cognitive, associational network framework (Greenwald et al., 1998).

This is not simply a case of semantics; rather, the theoretical differences between the two approaches to implicit process are significant. The differences, however, do not make the two incompatible in practice. For example, both Bornstein (2002) and IAT researchers (Asendorpf et al., 2002) have made identical predictions in dissociating explicit and implicit measures of personality. Thus, two traditionally disparate theoretical orientations tread on common ground, as well as simultaneously make obsolete the self-report versus projective assessment debate. That is, both explicit and implicit measures are important and necessary to assess personality adequately, though the precise manner in which this should be done remains unclear.

The Present Study

Given the conceptual overlap between Bornstein's work and that of IAT researchers, the current study sought to capitalize on the commonalities in an effort to guide future research in this domain. Specifically, this study utilized the predictions laid out by Bornstein (2002) and Asendorpf and colleagues (2002) in an attempt to first validate a new method of assessing implicit dependency. A recent modification of the IAT, the Single Category Implicit Association Test (SC-IAT; Karpinski & Steinman, 2005), was adapted to provide a measure of individual variation in implicit dependency needs. The original IAT paradigm requires complementary categories (for example, *self* and *not-self*), which presents both a number of advantages and disadvantages that vary as a function of the domain of interest (as discussed in detail

in Karpinski & Steinman, 2005). With respect to our chosen domain, *dependency* and *self*, it is more informative to examine the absolute associations of *dependency* with *self* alone, rather than the relative strength of *dependency-self* associations compared to associations of *dependency* with an unspecified *not-self*. Further, the SC-IAT was also adapted to yield an index of implicit neediness versus connectedness to parallel the developments in the assessment of explicit dependency. Given the extent of Bornstein's work with the ROD scale, some of it using similar methodology as the current research, and also his empirically-derived critique of the theory underlying the scale (Bornstein, 1996), the ROD scale was not administered in this study.

As discussed in detail by Bornstein (2002), gender differences tend to emerge on self-reported, more face valid measures of dependency, such that females report greater needs for dependency than do males. On projective measures of dependency, however, findings indicate that males and females score equivalently, suggesting that self-presentational biases are significant in determining scores on self-report measures, but not on projective ones. Thus, I anticipated that females would score higher than males on our selected self-report dependency measures (DEQ and IDI), and would not significantly differ from males on the implicit measures.

Further, it has been demonstrated that controlled dependent behavior is better predicted by self-report measures of dependency, whereas spontaneous dependent behavior is better predicted by projective measures (Bornstein, 1998). Therefore, a help-seeking task was employed, with instructions that varied in describing the task as part of either 1) a study of the relation between dependency and help-seeking, or 2) a study of problem-solving. Based on previous findings (Asendorpf et al., 2002;

Bornstein, 2002), I expected that self-reported dependency scores would better predict *controlled* help-seeking behavior (when informed that the study relates dependency and help-seeking), and implicit dependency scores would be more predictive of *spontaneous* help-seeking (when not informed that the task has anything to do with dependency). This portion of the study only used the broader implicit measure of dependency (rather than neediness and connectedness), due to the cleaner predictions that could be derived for this particular validation task.

McClelland and colleagues (1989) reported non-significant or small correlations between an individual's implicit and self-attributed motivation in a number of domains, and Bornstein and his colleagues (Bornstein, Bowers, & Bonner, 1996a, 1996b; Bornstein, Rossner, & Hill, 1994) have extended this issue into the realm of interpersonal dependency, finding larger, but still modest correlations between self-report and projective dependency measures. These findings beg the question of how best to characterize individuals whose explicit and implicit (in this case, dependency) needs are discrepant. Bornstein (1998) began to address this matter by examining the role of discontinuities between explicit and implicit dependency in help-seeking behavior under various conditions. His data, as described earlier, provide support for the general notion that implicit dependency is more predictive of spontaneous help-seeking, whereas explicit dependency is more closely related to controlled help-seeking. His data do not, however, inform us about the larger implications of discontinuities between implicit and explicit dependency motives (see Cogswell, 2008 for review of this, and other relevant unanswered questions).

Thus, in an effort to explore these implications, the present study also involved an administration of a short form of the Personality Assessment Inventory (PAI; Morey, 1991) and the Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1986) to all participants. The PAI is a comprehensive, clinically oriented personality instrument. I derived prototypical personality profiles on the PAI for individuals of four primary categories: 1) high explicit, high implicit dependency; 2) high explicit, low implicit dependency; 3) low explicit, low implicit dependency; and 4) low explicit, high implicit dependency. Research in the self-esteem domain has found individuals with high explicit but low implicit self-esteem tend to engage in more defensively self-enhancing behaviors (Bosson, Brown, Zeigler-Hill, & Swann, 2003; Jordan, Spencer, Zanna, Hoshino-Brown, & Correll, 2003). Based on these findings, I anticipated that participants high in implicit dependency and low in explicit dependency would be more likely to appear defensive on the PAI, as well as score higher on the denial items of the self-deception subscale of the BIDR (Paulhus, 1986).

Finally, given the link between interpersonal dependency and depression, both theoretically (e.g., Blatt, 1974) and empirically (e.g., Klein, Harding, Taylor, & Dickstein, 1988; Zuroff & Mongrain, 1987), the present study explored the relative predictive utility of implicit and explicit dependency measures for concurrent depressive symptoms and past major depressive episodes. Exploratory questions in this vein included: 1) whether one class of measures is more related to concurrent depression and a past history of depression than the other; 2) whether the neediness-connectedness distinction found in the DEQ is also supported in an implicit measure;

and 3) how discontinuities as represented using the various prototypes derived from the PAI may differentially predict depression.

Hypotheses

1. Females were expected to score higher than males on the IDI and DEQ connectedness, and no gender differences were anticipated on DEQ neediness or any of the implicit dependency indices.

2. In the informed condition, the IDI and DEQ dependency scores were hypothesized to better predict help-seeking behaviors than implicit dependency. In the uninformed condition, implicit dependency was expected to better predict help seeking than the IDI and DEQ dependency scores.

3. Replicating Bornstein's (1998) findings, I anticipated finding two separate two-way interactions, such that the explicit x condition and implicit x condition interactions would differentially predict help-seeking. Specifically, I expected that explicit dependency would be more predictive of help seeking in the informed, as opposed to uninformed, condition. Conversely, the implicit x condition interaction should be non-significant, suggesting that participants high in implicit dependency should seek help regardless of instructional condition.

4. DEQ neediness, but not connectedness, would be significantly associated with concurrent depressive symptoms and past depressive episodes. Likewise, implicit neediness was expected to predict current and past depression.

Exploratory questions

1. Which type of dependency assessment is most predictive of current depressive symptoms and past major depression - explicit or implicit dependency?

2. What is the clinical personality profile of the prototypical participant in each of the four groups described above? Do these profiles align themselves with any of the a priori PAI configurations reported by Morey (1991)? Which of the profiles is most likely to have a past history of major depressive episodes? As discussed above, I expected participants high in implicit dependency, and low in explicit dependency to be more likely to appear defensive on the PAI, as measured by an elevation on the Positive Impression Management scale, and no elevations on any anxiety scales. Finally, these same participants were expected to score higher on the self-deception subscale of the BIDR.

CHAPTER 2

METHOD

Participants

As determined by a power analysis, I recruited 119 participants from the introductory psychology subject pool in order to achieve power of approximately .80, using previous findings that suggest the likelihood of small to moderate effect sizes for all of the hypothesized effects (Rosenthal & Rosnow, 1991). The sample was 65% female, with a mean age of 20.9 years ($SD = 3.77$). Regarding race and ethnicity, the sample was 46% Caucasian, 26% African-American, 9% Asian-American, 3% Latino, 5% biracial, and 8% identified in a category other than those offered. The only exclusion criterion was that participants were required to be at least 18 years of age. Introductory psychology undergraduates used the Internet to indicate their interest in participating in the study.

Self-report Instruments

Demographic Questionnaire. All participants were asked to indicate their age, gender, and racial or ethnic identification .

The Depressive Experiences Questionnaire (DEQ; Blatt et al., 1976). The dependency subscale of the DEQ, a 29-item Likert-type scale, was used to measure dependency, neediness, and connectedness. Scores on the dependency factor were calculated using the weights derived from Blatt et al.'s (1976) sample as recommended by Zuroff, Quinlan, and Blatt (1990), in order to be consistent with previous research. Scores on neediness and connectedness subfactors were calculated based on Rude and Burnham's (1995) factor analysis of the dependency items. Unit-

weighted scoring was employed by summing those items that loaded higher than .40 on the respective factor and for which there was at least .10 difference in loading between the factors. The neediness factor consists of 11 statements like, “I become frightened when I feel alone”, “I urgently need things that only other people can provide,” and the connectedness factor consists of 11 statements like, “I would feel like I’m losing an important part of myself if I lost a close friend”, and “I am very sensitive to the effects my words or actions have on the feelings of other people.” The dependency scale of the DEQ has demonstrated good internal consistency ($\alpha > .75$), 12-month retest reliability ($r = .79$), and construct validity (Blatt et al., 1976; Blatt & Zuroff, 1992; Mongain, Vettese, Shuster, & Kendal, 1998; Zuroff, Moskowitz, Wieglus, Powers, & Franko, 1983), as well as concurrent validity with various measures of depressive symptomatology (e.g. Blatt, Quinlan, Chevron, McDonald, & Zuroff, 1982; Brown & Silberschatz, 1989; Whiffen & Sasseville, 1991). Neediness and connectedness subscales have demonstrated good internal consistency (α 's = .79) and two-year retest reliability (r 's = .72 and .63, respectively) in a prospective study (Cogswell et al., 2006).

Interpersonal Dependency Inventory (IDI; Hirschfeld et al., 1977). The IDI, a 48-item Likert-type scale, was used to provide an alternative explicit measure of dependency. Using principal components analysis, Hirschfeld and colleagues (1977) found that the IDI items loaded onto three subscales: Emotional reliance on another person (ER); Lack of social self-confidence (LS); and Assertion of autonomy (AA). Example items of the three subscales include, "I would be completely lost if I didn't have someone special" (ER), "I have a lot of trouble making decisions by myself"

(LS), and "I don't need other people to make me feel good" (AA). The present study employed the scoring method suggested by Hirschfeld and colleagues (1977), whereby subscale scores are utilized independently, as well as combined to form a more general dependency composite by adding scores from ER and LS and subtracting the score on AA. The three subscales have demonstrated acceptable reliability, with split-half correlations in three samples ranging between .85 and .87, .76 and .84, and .72 and .91, respectively (Hirschfeld et al., 1977), and strong retest reliability over intervals ranging from 16 to 84 weeks (Bornstein, 1997; Bornstein et al., 1994). Regarding the validity of the IDI, a psychiatric sample was found to score higher than normals on both the ER and AA subscales (Hirschfeld et al., 1977). The IDI has been meaningfully associated with other self-report measures of dependency and dependent behaviors across multiple domains (Hirschfeld, Klerman, Clayton, & Keller, 1983), as well as symptoms of dependent personality disorder (Bornstein, 1994).

Inventory to Diagnose Depression - Lifetime version (IDD-L; Zimmerman & Coryell, 1987). The IDD-L consists of 22 self-report items in a five-point Likert-type format, designed to assess for major depressive episodes according to Diagnostic and Statistical Manual of Mental Disorders – Fourth edition (*DSM-IV*) criteria (American Psychiatric Association, 1994). Participants were asked to respond to each question as it pertains to the week they recall feeling the most depressed over the course of their lifetimes. Each question taps the degree to which participants experienced a particular symptom of a major depressive episode (e.g., low mood, decreased energy, psychomotor agitation). Relative to diagnoses derived from standardized interviews

in a community-based adult sample, the IDD-L's sensitivity was 74%, specificity was 93%, and kappa was .60 (Zimmerman & Coryell, 1987). Additionally, the IDD-L has demonstrated a high level of internal consistency in research with a college student sample ($\alpha = .92$; Roberts & Kassel, 1997). Dependent variables used in the present study included the number of *DSM-IV* criterion A depressive symptoms endorsed, number of criterion B symptoms endorsed, and the categorical presence or absence of past major depressive episodes.

Beck Depression Inventory - II (BDI-II; Beck, Steer, & Brown, 1996). The BDI-II is a 21-item, 4-point Likert-type scale, which was used to assess participants' levels of depressive symptoms experienced over the past two weeks. The BDI-II has shown strong internal consistency in both student (Beck et al., 1996; Steer & Clark, 1997) and clinical samples (Beck et al., 1996), with alphas ranging from .89 to .92. The BDI-II has also demonstrated excellent test-retest reliability (Beck et al., 1996). Numerous studies have established the validity and reliability of the original BDI (see Beck, Steer, & Garbin, 1988).

Personality Assessment Inventory (PAI; Morey, 1991). The PAI consists of 344 self-report items designed to assess adult personality and psychopathology. The PAI is comprised of 22 scales: 11 clinical scales (somatic complaints, anxiety, anxiety-related disorders, depression, mania, paranoia, schizophrenia, borderline features, antisocial features, alcohol problems, and drug problems); 4 validity scales assessing inconsistent responding and positive or negative impression management; 5 treatment scales designed to index an individual's appropriateness and readiness for

treatment, as well as potential areas of concern; and 2 interpersonal scales measuring how relatively controlling and warm a person's interpersonal style tends to be.

The validity of the PAI is well documented, with a thorough review of the measure's convergent and discriminant validity as well as its concurrent predictive utility provided by Morey (1991). The validity scales of the PAI have been shown to effectively identify random responding as well as both positive and negative impression management (Blanchard, McGrath, Pogge, & Khadivi, 2003; Morey, 1991; Peebles & Moore, 1998).

The present study used the short form of the PAI, which consists of the first 160 items of the full measure. The short form allows for a reliable estimation of profiles that would presumably be obtained by the full PAI (Morey, 1991). Scale scores on the short form of the PAI are standardized and raw scores converted to T scores such that each scale has a mean T score of 50 and standard deviation of 10. The short form has demonstrated good internal consistency (median $\alpha = .76$) and one-month test-retest reliability (median $r = .79$), as well as a median correlation of .91 with the full PAI (Morey, 1991).

Morey (1991) has also reported on the use of Ward's method of analysis for the generation of typical clusters of PAI clinical scale scores. Morey (1991) reported data supporting the existence of ten empirically derived clusters, for which he provided descriptions based on each cluster's clinical scale configuration. Although little independent research has offered support of Morey's clusters, they nonetheless may prove useful in guiding questions to be addressed in future investigations of implicit-explicit discontinuities.

Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1994). The BIDR is a 40-item response-style measure made up of two 20-item subscales, self-deception (SD) and impression management (IM). SD refers to the tendency to give honestly believed, but overly favorable descriptions of oneself, whereas IM represents the tendency to give such favorable descriptions without necessarily believing them to be true. Participants rated the degree to which they agreed with each statement along a 7-point Likert-type scale. Paulhus (1994) reported adequate internal consistencies for each subscale, with Cronbach's alphas ranging from .65 to .75 for SD and .75 to .80 for IM.

The construct validity of the BIDR is well established, with scores consistently predicting scores on other related measures of socially desirable responding (Paulhus, 1991; 1994).

Implicit Instruments

Single Category Implicit Association Test (SC-IAT; Karpinski & Steinman, 2005). The SC-IAT is a modification of the IAT that assesses the strength of associations using a single target object. The measure was created to address what in some cases is a weakness of the IAT paradigm. The IAT uses a comparative approach, comparing the relative strength of associations of one target concept versus another. In some cases, this paradigm is perfectly reasonable, though in others, it may not be ideal. Particularly when personality or self-concept targets are of interest, it may be preferable to examine associations between self and the target concept rather than comparing associations of the target concept with self to those of the target concept with an unspecified other (Karpinski & Steinman, 2005). Like the IAT, the

SC-IAT was developed primarily for use as an attitude measure, and shares many of the IAT's properties and procedures described earlier. The SC-IAT has demonstrated promise in three separate studies, showing high levels of internal consistency (average $\alpha = .69$), relative immunity from self-presentational biases or faking, and good unique predictive utility as compared to the IAT (Karpinski & Steinman, 2005).

In the present study, the SC-IAT was modified to provide two separate implicit assessments of interpersonal dependency. A pilot study was conducted in which participants ($N = 30$) were first given working definitions of the target categories "independent," "dependent," "needy," and "connected" (see definitions in Appendix A). Participants then rated a list of adjectives according to how "independent" versus "dependent" and "needy" versus "connected" they judged each word to be. Based on these participant ratings, the four most representative words for each target category were selected for inclusion in the appropriate version of the SC-IAT (target words are displayed in Appendix B).

The first version of the SC-IAT was used to determine participants' associations of self with independent versus dependent words, and the second version measured associations of self with needy versus connected words. Each version included two stages. In each stage, self words and target words were randomly presented on a computer monitor. In stage one, participants categorized self words and independent words on one key (by pressing the appropriate key on the keyboard), and dependent words on another key. In stage two, self words were categorized with dependent words on one key, and independent words on another key. Thus, scores were derived from taking the difference in response times between the first and

second stages of the task. Similarly, in the second version of the SC-IAT, needy and connected words simply replaced the independent and dependent words in the above description. In order to encourage automatic responses, a time deadline was built into the task, such that if participants failed to respond within 1500ms of a target word's presentation, they were instructed to respond more quickly (Karpinski & Steinman, 2005; Nosek & Banaji, 2001).

Help-seeking Task

Using the help-seeking paradigm reported by Bornstein (1998), the study investigators instructed participants that they would be completing a problem-solving task in which they must unscramble as many anagrams as possible in a 10-minute time period. After providing several sample anagrams to participants, the instructional manipulation was introduced. In the informed condition, participants were told that the goal of the study was to learn more about the relationship between dependency and help seeking. In the uninformed condition, participants were told that the purpose of the study was simply to learn about how college students solve problems. Verbatim scripts containing the two instructional conditions are provided in Appendix C.

Immediately following the manipulation, participants were given a binder with 20 anagrams that increased in difficulty, and were told that they could ask the experimenter for help as needed, and that the experimenter would give them the next letter required to solve the anagram. Participants were told to complete the anagrams in order, not turning the page to reveal the next anagram until the current anagram was solved. The experimenter then sat behind the participant, recording time and noting each request for help made by the participant. The task was concluded once

the participant finished or ten minutes elapsed. Experimenter gender was held constant (male) across all participants.

Procedure

Participants signed up for convenient times to complete the study using an Internet-based system. Upon arriving at the laboratory, they first read and signed an informed consent, and then completed both versions of the SC-IAT. The next portion of the study was the help-seeking task, where participants completed several example anagrams, before being given the instructional manipulation. Participants were randomly assigned to instructional condition, and then, following the manipulation, participants completed the 10-minute anagram task. Subsequently, participants completed an online battery of questionnaires containing the demographics form, DEQ, IDI, IDD-L, BDI-II, BIDR, and PAI. Upon completion of this battery, participants received research credits, were thanked for their participation, and were fully debriefed.

CHAPTER 3

RESULTS

Descriptive Statistics

Means and standard deviations were calculated for each variable, as were indicators required to check for assumptions such as normality, skewness, and kurtosis. All variables' means and standard deviations were consistent with previously reported data, and are displayed in Table 1. Each variable was found to be normally distributed, with the exception of number of requests for help made during the help-seeking task. Thus, this variable was normalized using a logarithmic transformation, and all analyses involving requests were conducted using both the original and transformed variables. However, as no differences were found between the two approaches, all results reported use requests as originally scaled.

Bivariate correlations were computed among all variables of interest, as were coefficient alphas to examine internal consistency. All zero-order correlations and alpha coefficients are displayed in Table 2. Of note, all self-report dependency indices are significantly correlated with each other, and all are independent of indirect dependency measures. Further, all self-reported dependency indices were inversely correlated with both impression management and self-deception scores, with the associations between self-deception and neediness and IDI scores stronger than the associations between impression management and neediness and IDI scores. As expected, both self-deception and impression management were independent of implicit dependency measures.

Table 1

Means and Standard Deviations of all Study Variables

	Mean	Standard Deviation
Neediness	36.51	10.83
Connectedness	51.42	9.89
IDI Total Score	46.06	13.33
BDI	9.38	8.57
Self-deception	5.23	3.13
Impression Management	3.87	3.05
Help-seeking: First item request given for help	9.42	4.04
Help-seeking: Latency (seconds)	233.70	140.49
Help-seeking: Number of requests	4.10	3.06

Note. IDI = Interpersonal Dependency Inventory; BDI = Beck Depression Inventory.

A series of t-tests were conducted to examine whether gender differences existed on any dependent variables of interest. Several PAI indices were found to differ by gender, with men scoring significantly higher than women on Mania, $t(113) = 2.52, p = .01$, Schizophrenia, $t(115) = 2.93, p < .01$, Antisocial Features, $t(115) = 4.52, p < .01$, and Alcohol Problems, $t(117) = 2.76, p < .01$. All other comparisons were non-significant, $ps > .05$.

Table 2

Bivariate Correlations and Coefficient Alphas along Diagonal

	Need	Conn	IDI	Imp Dep	Imp Need	SD	IM
Need	.80						
Conn	.51**	.74					
IDI	.78**	.62**	.80				
Imp Dep	.03	.02	.08	.70			
Imp Need	-.06	-.06	.04	.33**	.69		
SD	-.56**	-.25**	-.52**	-.04	-.09	.66	
IM	-.34**	-.23*	-.23*	-.02	-.12	.38**	.72

Note. Need = Neediness; Conn = Connectedness; IDI = Interpersonal Dependency Inventory; Imp Dep = implicit dependency; Imp Need = implicit neediness; SD = Self-deception; IM = Impression management.

* $p < .05$

** $p < .01$

Hypothesis 1: Gender Differences on Dependency Indices

A series of t-tests were performed to examine whether any of the self-report or indirect dependency variables differed by gender. Contrary to expectations, there were no gender differences in responses to any self-report or indirect dependency measures, all $ps > .20$. Means, standard deviations, and results of t-tests are presented in Table 3.

Table 3

Gender differences on dependency indices

	Males		Females		<i>T</i>	p-value
	Mean	SD	Mean	SD		
Implicit dependency	-.26	.33	-.29	.33	.39	.70
Implicit neediness	-.37	.31	-.36	.31	.06	.95
IDI	45.18	13.11	46.53	13.50	.52	.61
Neediness	34.81	11.50	37.42	10.41	1.25	.21
Connectedness	50.63	10.18	51.83	9.78	.63	.53

Note. IDI = Interpersonal Dependency Inventory.

Hypotheses 2 and 3: Relative Prediction of Help-seeking by Dependency Indices

Multiple regression analyses were conducted to evaluate whether in the informed condition, the IDI and DEQ dependency scores predicted help-seeking behaviors better than did implicit dependency measures. In the uninformed condition, implicit dependency indices were expected to better predict help seeking than the IDI and DEQ dependency scores. Hypothesis 3 predicted finding two separate two-way interactions, such that the self-report x condition and implicit x condition interactions would differentially predict help-seeking.

To evaluate these hypotheses, multiple regression was used to enter dependency indices, condition as a dichotomous predictor, and the dependency x

condition interaction, to predict three measures of help-seeking (the first anagram for which help was sought, the latency to requesting help, and the number of requests for help). None of these analyses produced any significant findings; all main effect and interaction $ps > .08$. Additionally, multiple regression was utilized to examine whether the implicit x self-report interaction may predict help-seeking, and analyses using each help-seeking indicator were nonsignificant, $ps > .32$.

Hypothesis 4: Relations between dependency measures and depression

First, bivariate correlations were computed between all self-report and implicit dependency indices and both past and concurrent depression. It was anticipated that neediness, but not connectedness, would be significantly associated with concurrent depressive symptoms and past depressive episodes. Likewise, implicit neediness was hypothesized to be associated with current and past depression. The correlation matrix is reproduced as Table 4. As shown in the table, neediness was significantly related to concurrent BDI scores ($r = .48$) and past criterion B depressive symptoms ($r = .20$). Contrary to prediction, connectedness also predicted concurrent BDI scores ($r = .39$) and past criterion B symptoms ($r = .24$), as well as past major depressive episodes ($r = .19$). Whereas implicit neediness was unrelated to any depression measures, implicit dependency significantly predicted past criterion A symptoms ($r = .21$), past criterion B symptoms ($r = .20$), and past major depressive episodes ($r = .22$).

Table 4

Correlation matrix depicting dependency-depression relations

	BDI	Crit A	Crit B	MDE
Need	.48**	.11	.20*	.12
Conn	.39**	.13	.24**	.19*
IDI	.44**	.16	.28**	.23*
Imp Dep	.06	.21*	.20*	.22*
Imp Need	.06	.08	.09	.09

Note. Need = Neediness; Conn = Connectedness; IDI = Interpersonal Dependency Inventory; Imp Dep = implicit dependency; Imp Need = implicit neediness; BDI = Beck Depression Inventory; Crit A = criterion A depressive symptoms; Crit B = criterion B depressive symptoms; MDE = major depressive episode.

* $p < .05$

** $p < .01$

Exploratory Analysis 1: Relative Predictive Utility of Dependency Indices for Concurrent and Past Depression

To determine the relative utility of significant self-reported and implicit dependency scores in predicting depression, multiple regression analyses were conducted. With regard to concurrent depression (BDI scores), only IDI dependency scores remained significant after controlling for other significant self-report dependency predictors. When controlling only for neediness, IDI dependency

remained a significant predictor of BDI scores, $p < .01$, change in $R^2 = .04$. When controlling only for connectedness, IDI dependency remained significant as well, $p < .01$, change in $R^2 = .11$.

Regarding relative prediction of depression involving both implicit and self-reported dependency measures, regression results are summarized in Tables 5 and 6. In predicting both criterion A and B symptoms of major depression, implicit dependency was the only significant predictor when all dependency variables were simultaneously entered into the regression equations. The self-reported dependency indices, as shown in Table 5, were all non-significant predictors in both analyses. Multiple regression was used to evaluate whether the implicit x self-report interaction was a significant predictor of concurrent or past depressive symptoms. Controlling for the predictors' main effects, all interaction terms were non-significantly related to all continuous depression measures, $ps > .32$.

Logistic regression analyses were conducted to compare significant predictors of past major depressive episodes, coded as a dichotomous variable. As can be seen in Table 6, implicit dependency remained a significant predictor after accounting for the effects of both connectedness and IDI dependency. Notably, each self-report measure was no longer significantly associated with past major depression after controlling for the effect of the other. Also, when controlling for the relation between implicit dependency and past depressive episodes, both self-report dependency measures retained their significance. Finally, logistic regression revealed the self-report x implicit interaction term to be a non-significant predictor of past episodes, $p = .51$.

Table 5

Prediction of continuous depression scores by implicit and self-reported dependency

	Beta	<i>T</i>	<i>p</i> -value
Criterion A symptoms			
Implicit	.21	2.16	.03
dependency			
IDI	.10	.53	.60
Neediness	-.06	-.37	.71
Connectedness	.12	.95	.34
Criterion B symptoms			
Implicit	.20	2.09	.04
dependency			
IDI	.19	1.09	.28
Neediness	-.10	-.63	.53
Connectedness	.20	1.63	.11

Note. IDI total = Interpersonal Dependency Inventory.

Table 6

Prediction of depressive episodes by implicit and self-reported dependency

	Wald	Odds ratio	<i>p</i> -value
Implicit controlled	5.35	4.82	.02
Connectedness	4.59	1.05	.03
IDI	4.02	1.04	.04
Connectedness controlled	4.69	1.05	.03
Implicit	5.28	4.77	.02
IDI	1.97	1.03	.16
IDI controlled	5.72	1.04	.01
Implicit	5.21	5.10	.02
Connectedness	.74	1.02	.39

Note. IDI = Interpersonal Dependency Inventory.

Exploratory Analysis 2: Prototype Analyses and PAI Clusters

Using the categorical model suggested by Bornstein (1998), four groups were constructed from the sample, with “high” and “low” determined by scores at least .5 standard deviations above or below the sample means. Given that there were high correlations among the self-report dependency measures, and to simplify classification, a composite score was created for each participant to represent self-

reported dependency. The composite score was created by simply adding each self-reported score to compute a total. The *high dependency* group ($n = 11$) was high on both self-reported and implicit dependency; the *low dependency* group ($n = 11$) was low on both self-reported and implicit dependency; the *dependent self-presentation* group ($n = 7$) was high on self-reported dependency, but low on implicit dependency; and the *unacknowledged dependency* group ($n = 11$) was low on self-reported and high on implicit dependency.

Once groups were constructed, prototypical profiles were computed for each group with mean scores on each of the PAI clinical and validity scales (see Table 7 for means). Review of Table 7 indicates the predictions were not supported, as the unacknowledged dependency group did not appear defensive, given a low *T*-score on positive impression management, and low scores on the anxiety scales. Within prototype groups, the relative contribution of self-reported dependency appears much greater than that of implicit dependency regarding prediction of the various PAI indices. This hypothesis is substantiated by correlation analysis in the full sample, which reveals significant relations between self-reported dependency and a variety of PAI scales, coupled with non-significant correlations between the implicit dependency measure and the PAI scales. Based on the greater relevance of self-reported dependency in predicting PAI profiles, it is not surprising that the group means appear to vary as a function of whether the group is high or low on self-reported dependency.

Additionally, univariate ANOVA was utilized to examine whether group differences existed in Paulhus' multidimensional construct of social desirability.

Table 7

Group means on PAI (T-scores)

	High dep	Low dep	Dep self-pres	Unack dep
Som	52	45	53	52
Anx	62	48	60	51
Ard	68	47	60	48
Dep	62	47	55	57
Man	56	54	55	58
Par	60	49	60	53
Scz	64	48	50	55
Bor	69	51	62	57
Ant	62	60	54	56
Alc	52	49	46	46
Drg	53	55	54	49
Pim	38	45	43	40
Nim	53	52	49	50

Note. Som = Somatic complaints; Anx = Anxiety; Ard = Anxiety-related disorders;

Dep = Depression; Man = Mania; Par = Paranoia; Scz = Schizophrenia; Bor =

Borderline features; Ant = Antisocial features; Alc = Alcohol problems; Drg = Drug

problems; Pim = Positive impression management; Nim = Negative impression

management; High dep = High dependency group; Low dep = Low dependency

group; Dep self-pres = Dependent self-presentation group; Unack dep =

Unacknowledged dependency group.

Omnibus ANOVA revealed that there were significant group differences in both impression management [$F(3,36) = 4.42, p = .01$] and self-deception [$F(3,36) = 2.89, p = .05$]. Means and standard errors for each group are presented in Table 8. Post hoc Tukey tests were conducted to clarify which groups differed from each other. Surprisingly, there were no significant group differences regarding self-deception (all $ps > .08$). Evaluating differences in impression management, however, the unacknowledged dependency group exhibited significantly more impression management than the high dependency and the dependent self-presentation groups ($ps < .04$). Although the unacknowledged dependency ($M = 5.91$) versus low dependency ($M = 4.36$) comparison did not reach statistical significance, the means were in the predicted direction.

Using the method outlined by Morey (1991), deviation scores were calculated that represented the Euclidean distance between each of our profiles and each of the 10 common clusters identified by Morey (1991). Using this method, lower deviation scores reflect more similarity between a profile and a cluster. As expected, participants representing the low dependency group were most closely related to Morey's Cluster 1, which is characterized by a lack of elevation across clinical scales, an absence of prior psychiatric treatment, and a generally high level of functioning. The dependent self-presentation group most closely aligned with Morey's Cluster 5, which is reflective of individuals who are broadly functioning quite well, and whose psychological distress is likely marked by experiences of anxiety and depression. Interestingly, the high dependency and unacknowledged dependency groups were both most closely related to Morey's Cluster 6, somewhat surprising given the

Table 8

Group means and standard errors on impression management and self-deception

	Impression management		Self-deception	
	Mean	SE	Mean	SE
High dependency	1.91	.90	3.91	.88
Low dependency	4.36	.90	6.18	.88
Dependent self- presentation	1.86	1.13	2.71	1.10
Unacknowledged dependency	5.91	.90	5.91	.88

unacknowledged dependency group's low scores on self-reported dependency, and the apparent lack of contribution of implicit dependency scores reported above. Cluster 6 individuals frequently experience difficulties in thinking and concentration, and have interpersonal lives punctuated by fears of rejection and a tendency to be perceived as cold and hostile by others, leading to social isolation. Individuals assigned to this cluster also are somewhat more likely to experience mild psychotic symptomatology, including vaguely persecutory thoughts and peculiar attitudes (Morey, 1991).

Finally, ANOVA was used to examine whether group differences were present in concurrent and past depression. The omnibus ANOVA was significant for concurrent BDI scores [$F(3,36) = 4.03, p = .01$], and non-significant for past criterion

A and B depressive symptoms ($ps > .08$). Tukey post hoc tests were conducted to examine more closely group differences in BDI scores, and revealed that the high dependency group had significantly higher scores than the low dependency group ($p = .02$), and marginally higher scores than the dependent self-presentation group ($p = .07$). Group means and standard deviations for the continuous depression variables are depicted in Table 9.

Table 9

Group means and standard deviations on continuous depression variables

	BDI scores		Criterion A symptoms		Criterion B symptoms	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
High dependency	15.82	11.86	.64	.50	3.82	3.66
Low dependency	4.55	3.39	.27	.47	.73	1.49
Dependent self-presentation	15.29	6.60	.43	.54	3.43	3.46
Unacknowledged dependency	8.45	9.60	.64	.50	2.91	2.59

Note. BDI = Beck Depression Inventory.

To examine past major depressive episodes, chi-square analyses were conducted, and demonstrated marginally significant group differences in the proportion of participants who met criteria for past depression, $\chi^2(3) = 6.34, p = .09$. Proportions of individuals meeting criteria for past episodes were as follows: low dependency group, 1/11 participants; high dependency group, 6/11; dependent self-presentation group, 3/7; unacknowledged dependency group, 6/11. Post-hoc chi-square tests were conducted to examine all pairwise comparisons. Using Fisher's exact tests, the high dependency group had a significantly higher ratio than the low dependency group ($p = .03$), and the unacknowledged dependency group's ratio was significantly greater than the low dependency group ($p = .03$). All other comparisons were non-significant, $ps > .13$.

CHAPTER 4

DISCUSSION

Interpersonal dependency historically has been linked to a variety of forms of psychopathology, perhaps most notably to major depression. However, the precise manner in which dependency leads to depressive symptoms has remained relatively obscure, in part due to difficulties conceptualizing and measuring dependent traits (e.g., Coyne & Whiffen, 1995). Factor analytic work (e.g., Rude & Burnham, 1995) helped to elaborate a more complex structure of dependency, in that it allowed for dependency to exist in relatively more mature (connectedness) and immature (neediness) forms. To date, the evidence for the revised conceptualization of dependency is limited, but in one prospective, longitudinal study, neediness, but not connectedness, did emerge as a predictor of major depressive episodes (Cogswell et al., 2006).

In addition to the challenges of assessing dependency in particular, larger barriers exist in the assessment of any personality trait. Although the self-report tradition of personality assessment has been highly successful in developing reliable measures that predict outcome criteria of interest, it has struggled with how to address whether individuals have the capability and willingness to report their internal experiences and self-concepts. Due in large part to criticisms of the self-report tradition's failure to deal with these difficulties, an alternative tradition of assessment gained momentum, one led by advocates of projective testing. Projective tests, and all other permutations of indirect assessment, are argued to circumvent the problems of

limited capability and willingness by employing instruments that are low in face validity.

In recent years, the interest in indirect assessment has blossomed, especially within the field of social cognition and attitude assessment. With the advent of the IAT, implicit measurement strategies have been applied to attitudes about race (Greenwald et al., 1998), as well as to self-concept domains such as self-esteem (Greenwald & Farnham, 2000). Although this literature is growing quite rapidly, it is still unclear how to interpret an implicit attitude versus a self-reported attitude. Many authors have addressed this topic (for notable examples, see Fazio & Olson, 2003; Rudman, 2004; Wilson et al, 2000), with a primary goal being the identification of different classes of behavior that may be predicted by different approaches to measurement.

Working from within a different theoretical framework, psychodynamic writers have approached a similar conceptual problem, that is, how to understand the relations between self-reports and projective instruments. McClelland and colleagues (1989) laid the foundation for this work, differentiating between two classes of motives, those that are self-attributed (self-reported) versus those that are implicit (projectively assessed). With this framework, Bornstein (1998) examined the joint assessment of interpersonal dependency, using a self-report instrument and a Rorschach-derived index. He was able to demonstrate initial support for the notion argued by McClelland et al., namely, that self-report instruments may be better predictors of controlled or intentional behavior, and indirect measures may better predict spontaneous or unintentional behavior. These findings are especially notable

given the overlap of their implications with those of studies conducted within a social cognitive framework, examining traits such as anxiety (Egloff & Schmukle, 2002) and shyness (Asendorpf et al., 2002).

Based on the remarkable similarity of hypotheses generated by social cognitive and psychodynamic researchers, examination is warranted to determine whether the hypotheses are supported empirically. The present study sought to contribute evidence in this vein. Using the personality construct of interpersonal dependency allowed for a clear evaluation of whether data gathered by Bornstein (1998) using a projective instrument maps onto data gathered in this study using a social cognitive measure derived from the IAT. As substantial progress has been made in understanding the conceptualization and assessment of dependency, it is a potentially fruitful area in which to address more basic questions regarding how to understand the relations between implicit and self-report measures (see Cogswell, 2008 for discussion of this issue).

In the present study, I developed an SC-IAT instrument modified to assess dependency, as well as its components of neediness and connectedness. I then attempted to replicate the procedure reported in Bornstein (1998), which presents a help-seeking task to participants under conditions expected to elicit either controlled or spontaneous help-seeking behavior. As outlined in the hypotheses section of this dissertation, it was anticipated that use of the help-seeking task would provide validation of the implicit measures, and lend some clarity regarding their relations with the administered self-report instruments. Further, this study examined whether self-reported or implicit dependency was more closely associated with concurrent and

past depression. Finally, the significance of discrepancies between individuals' self-reported and implicit dependency scores was explored, with a subset of individuals being included in analyses using profiles derived from the PAI.

Validity of implicit dependency measure

Findings indicated moderate support for the validity of the implicit dependency measure. Initial support was suggested based on the orthogonality of the implicit dependency and neediness measures from the self-report instruments. Prior literature argued that implicit and self-report measures of purportedly the same construct should be moderately inter-correlated (Asendorpf et al., 2002; Bornstein, 2002), although it has also been noted that valid measures may at times be independent of each other (Fazio & Olson, 2003). In spite of the implicit measures' independence of the self-report dependency scales, the significant correlation between implicit dependency and implicit neediness ($r = .33$) makes clear that the two implicit measures are capturing some common variance.

A further examination of the implicit measures' validity was conducted by examining gender differences. Previous research demonstrated that women tend to score higher than men on self-report dependency measures and equivalent to men on the Rorschach Oral Dependency Scale (e.g., Bornstein, 2002). Thus, it was unexpected that the present study failed to find gender differences on either the implicit or self-report dependency instruments. This finding is problematic in the sense that it prevents a more thorough evaluation of the implicit measures' validity. It is also noteworthy that no gender differences emerged on self-report dependency

scales in another recent study (Cogswell et al., 2006), which is again inconsistent with the literature summarized in Bornstein (2002).

Use of the help-seeking task

The key element of the process dissociation method of validating implicit and self-report measures of the same construct is finding external criteria that are differentially predicted by the two classes of measures under different circumstances (Asendorpf et al., 2002; Bornstein, 2002). In addition to examining gender differences, the current study included a help-seeking task, which allowed participants to request help when dependency was either salient or not salient. This task was conducted in precisely the manner in which it was described by Bornstein (1998), and I expected to find results that mirrored those reported in his article. Thus, I anticipated that when dependency was made salient, self-reported dependency would be more closely related to help-seeking, and that implicit dependency's predictive utility would not vary by condition. This hypothesis was not supported by the present experiment, and surprisingly, none of the dependency indices were significantly related to any help-seeking indicators.

Again, this absence of significant findings is unfortunate in that the failure of the help-seeking task to function as was anticipated prevents a true evaluation of the implicit dependency measures' validity. It is unclear what was responsible for the task's failure, as the reported methodology in Bornstein (1998) was identically reproduced here. One possible explanation that can be ruled out is that the current research used a different indirect measure (the SC-IAT dependency measure rather than the Rorschach-derived index). Although the SC-IAT dependency measure

utilized in this study may, in fact, function quite differently than the Rorschach scale, it cannot be the only explanation for the lack of findings given the absence of significant correlations between the self-reports and help-seeking under either condition. Based on the lack of any significant findings, the help-seeking task itself appears implicated as invalid, which obviously prevents any further evaluation of the implicit measures using the help-seeking task.

It is important to consider possible explanations for the apparent failure of the help-seeking task in the current study. It is difficult to argue that the task is simply not a valid assessment of help-seeking, given both the substantial face validity built into the task and the results reported in Bornstein's (1998) original article. The lack of results in this study is especially striking in the sense that none of the hypothesized correlations even approached statistical significance. It seems that either the results reported by Bornstein (1998) were artifactual, or that the present study included some methodological change that was not identified a priori. The only methodological distinction that could be considered as potentially relevant was my decision to keep experimenter gender constant, and male. Although holding experimenter gender constant makes sense, prior research (as summarized in Bornstein, 1992) has shown that dependent men tend to request help regardless of experimenter gender, whereas dependent women are more likely to request help when the experimenter is female. In our sample, which was mostly female, post-hoc analyses revealed that males showed significant correlations between neediness and requests for help ($r = .32$), but all other dependency-help correlations were non-significant. Females in our sample had no correlations between dependency and help-seeking indices even approaching

significance. Although this follow-up analysis is certainly not conclusive, it remains a possibility that the experimenter being male may have contributed somewhat to the lack of findings in this portion of the study. Despite this possibility, it is unlikely that this methodological difference accounts in full for the absence of significant findings.

Regardless, the question is begged of whether the conceptual link between dependency and help-seeking is more tenuous than it appears in the literature. One way to address this problem is to explore whether other kinds of behavioral tasks would be more suited for conducting a study of this sort. It is possible that assessing help-seeking in other contexts would yield more consistent results; perhaps in affect-laden scenarios, in situations more meaningful to participants, or in tasks that elicit truly spontaneous help-seeking. Another potential avenue would be to utilize behavioral tasks that are designed to elicit other patterns hypothetically and empirically linked to dependency. As suggested by Bornstein (1992), dependent individuals are more likely to demonstrate interpersonal sensitivity, ability to correctly intuit social cues, susceptibility to the influence of authority figures, compliance, and affiliative behavior, and thus, further research could use behavioral assessments that pull for these tendencies.

Dependency and Depression

In a more exploratory vein, the relative relations between self-report dependency instruments versus implicit dependency and depression were compared. Not surprisingly, self-reported dependency was most closely associated with self-reported concurrent depressive symptoms, as all three self-report indices were significantly correlated with BDI scores. The self-report measures also had some

predictive utility in relating to past depressive symptoms, with the IDI correlated with Criterion A symptoms, and all three measures significantly correlated with Criterion B symptoms. Notably, implicit dependency scores were significantly correlated with past depressive Criterion A and B symptoms, but not concurrent BDI scores.

Although the reason for the disparity here is unknown, prior literature (e.g., Bornstein, 2002; McClelland et al., 1989) would oppose the idea that current affective states are more closely tied to self-report measures than to more indirect measures, as it has argued for precisely the opposite conclusion. Also interesting were findings relevant to predicted distinctions between neediness and connectedness, both in the self-reports and the implicit measures. Self-reported connectedness actually was more strongly related to the various depression indices than was self-reported neediness, which is counter to the theoretical contrast between those two constructs. The literature, as discussed earlier, has consistently found neediness to be more pathological than connectedness. It is important to avoid references to connectedness as “mature” or “adaptive,” given its relations to depressive symptomatology in the present study, and also in the extant literature (e.g., McBride, Zuroff, Bacchioni, & Bagby, 2006). Given the consistent correlations between implicit dependency and the depression indices, it was unexpected to find no relations between implicit neediness and any of the depression measures. It is likely that the implicit neediness measure itself was faulty, as it was independent of all other study variables, with the exception of implicit dependency. Based on the measure’s apparent problems, it was not included in the remainder of the analyses.

To further tease apart the contributions of the different classes of dependency measures in predicting depression, analyses were conducted that controlled for the effects of other predictors. First, as depicted in Table 5, when all predictors of Criterion A and B depressive symptoms were entered simultaneously into multiple regression equations, only implicit dependency remained significant. Additionally, and as shown in Table 6, implicit dependency remained a significant predictor of past major depressive episodes after controlling for the effects of both self-report dependency measures. In this latter analysis, when implicit dependency was controlled for, both self-report measures remained significant as well. This pattern of results indicates that whereas all selected dependency measures had some predictive utility for past depression, the implicit measure was incrementally useful in predicting past symptoms and episodes. This serves as a strong endorsement of the implicit dependency measure's validity, as well as a recommendation for its future use in accounting for unique variance beyond that contributed by self-report instruments.

Dependency and Personality/psychopathology

Consistently, self-reported dependency was significantly associated with psychopathology as assessed via the PAI, and implicit dependency was not correlated with any of the PAI clinical or validity scales. Thus, the defensiveness anticipated to be evident in a subset of participants who self-report low dependency and appear highly dependent on the implicit measure was not found. However, on Paulhus' BIDR, correlations existed between self-reported dependency measures and both impression management and self-deception. The implicit dependency instrument, on the other hand, was independent of both impression management and self-deception,

which was to be expected given the relative immunity to self-presentation biases thought to characterize more indirect measures (e.g., Fazio & Olson, 2003). After constructing four groups that replicate those created in Bornstein's (2002) study, group comparisons revealed that the unacknowledged dependency group (low self-reported, but high implicit dependency scores) exhibited significantly more impression management than each of the other groups, although the comparison with the low dependency group did not reach statistical significance. This was somewhat surprising, as group differences in self-deception were predicted to be more prevalent than those in impression management. This set of results implies that the moniker *unacknowledged* dependency may be misleading, given its suggestion that participants are unaware of their dependent orientation. Rather, it seems that the process of presenting oneself as relatively free of dependent motives may be a more conscious, intentional activity.

A set of analyses according to Ward's method was utilized to explore how the constructed groups differed in terms of their full PAI protocols. Not surprisingly, the low dependency group appeared the most adaptive according to the PAI clinical scales, closely aligning with Morey's cluster 1. This cluster has been identified as capturing individuals who are relatively free of psychopathology and have not engaged in psychiatric treatment. The dependent self-presentation group was most closely associated with Morey's cluster 5, which represents individuals who are generally functioning at a high level, but may be troubled by mild symptoms of depression and anxiety. This positioning of the dependent self-presentation group suggests that simply endorsing high levels of interpersonal dependency is not

indicative of susceptibility to psychopathology. In this particular case, the appearance of these individuals as being highly dependent may be more a function of impression management, as opposed to a truly dependent interpersonal orientation. With that being said, this group did not engage in more impression management on Paulhus' measure, nor did these participants have elevated scores on the positive or negative impression management scales of the PAI.

The other two groups, high dependency and unacknowledged dependency, were both closely associated with Morey's cluster 6, which is significantly more pathological than the other clusters represented in the sample. This particular cluster is characterized by difficulties in thinking and concentration, and these individuals often have interpersonal lives plagued by fears of rejection and a tendency to be perceived as cold and hostile by others. These individuals may also be somewhat more suspicious, all of the above tendencies frequently leading to social isolation. Whereas this cluster was not hypothesized to be most relevant in characterizing these groups (cluster 7 is typically associated with dependent personality disorder, and was the obvious choice), its organization around fears of rejection and isolation, and its ties to troubled interpersonal relationships, make sense. What may be more notable, however, than the particular clinical features that can be used to understand these subgroups, is the link between the high dependency and unacknowledged dependency groups. Based on the apparently minimal relations between implicit dependency and the PAI clinical scales in the larger sample, it is remarkable that in the Ward's method analysis, implicit dependency scores were clearly important to consider. If implicit dependency was irrelevant, it would be expected that the unacknowledged

dependency group would more closely resemble the low dependency group, as opposed to the high dependency group. However, this was not the case. This finding lends additional support in validating the implicit measure, as implicit dependency was found to have contributed meaningful variance in predicting psychopathology as measured by the PAI. Additionally, it emphasizes the importance of not relying on a single format of clinical assessment. Without including an implicit measure in this study, the unacknowledged dependency participants would look the same (in terms of dependency) as the low dependency group. This conclusion would clearly be erroneous, as it would obscure significant differences in the two groups' psychopathological profiles.

Each of the groups was compared regarding their scores on the various depression indices. Consistent with the PAI data, the high dependency group reported more concurrent depressive symptomatology than the low dependency group, and both the high dependency and unacknowledged dependency groups met criteria for past major depressive episodes at a higher rate than did participants in the low dependency group. Thus, the importance of considering participants' scores on the implicit dependency measure is again highlighted, as scores on implicit dependency played a significant role in determining whether participants reporting high levels of dependency were more or less prone to depression, and whether participants reporting lower dependency strivings were similarly at risk for major depression. A final implication of this portion of the study is that discrepancies between self-reported and implicit dependency are themselves not necessarily maladaptive. The hypothesis that they were maladaptive was put forth in a recent review (Cogswell, 2008), and the

results of the present study do not support this idea. If discrepancies between self-reported and implicit dependency measures were indeed maladaptive, it would be expected that the unacknowledged dependency group would be significantly more pathological than any of the other groups, with the most conservative comparison being that with high dependency participants. As discussed above, this pattern was not reflected in the data, although unacknowledged dependency was associated with more pathology than the other comparison groups.

Limitations

Probably the most significant limitation of the present study was the failure of the help-seeking task to function as it was expected. The reasons for the task's problems are unknown, and various explanations were considered above. Regardless, the absence of relations between help-seeking indices and all predictors precluded a more thorough investigation of the implicit measures' validity. Other potential drawbacks of the present study include several inconsistencies between the findings and those reported previously in the literature. The expected gender differences were not uncovered in the self-report measures, which disallowed another opportunity to examine evidence for the validity of the implicit measure. Regarding analyses pertaining to dependency-depression associations, implicit dependency was found to be independent of concurrent depression, which is not what would be predicted based on prior work that established the tendency of implicit measures to vary in concert with current affective states. A final inconsistency was the finding that connectedness was more predictive of depression than was neediness, precisely opposite what was anticipated based on the definitions of those constructs. It is worth noting that this

pattern may be indicative of flaws in the conceptualization of neediness and connectedness, as opposed to flaws in the present study. A final limitation identified is the small sample size used for the Ward's method analyses. Although this portion of the study offers some encouraging initial data, it would be preferable to recruit participants based on their dependency scores, which could ensure substantially larger groups than those I constructed out of an unselected sample.

Clinical Implications

The primary implication of the present study for clinical work is the emphasis on using multiple assessment formats. Although such an approach is already used by many clinicians, the empirical evidence continues to mount with the findings reported here. It is clear that using only one type of assessment (self-report measures, for example) may lead clinicians to run the risk of missing important information that could be useful in case conceptualization, diagnosis, and treatment. As was demonstrated in the present study, without using an implicit measure, the unacknowledged dependency group would appear the same as the low dependency group in terms of their dependency scores. This false appearance potentially would be problematic in a clinical setting, given the relevance of these groups' differences in terms of past and current depressive experiences, and regarding the differing quality of their interpersonal relatedness. Granted, administering computer-based implicit measures such as those derived from the IAT might be a challenge in some clinical settings where computers may not be readily available for patients' use. However, using some form of an established indirect assessment that couples with a self-report

measure will undoubtedly yield a richer, more comprehensive assessment of the personality constructs of interest.

The second major implication of the present work regards how dependency itself is conceptualized clinically. As in other domains, it seems there are two relatively independent processes determining individuals' dependent motivations, one more conscious, and the other more unconscious. This observation has obvious implications for how clinicians should approach the ongoing assessment that occurs in psychotherapy, as it is evident that patients may be unaware of (and thus unable to report) their dependency needs. Further, the independence of these two processes allows for the possibility of dissociations, and it is important for clinicians to remain cognizant of the potential for these phenomena. Despite the fact that the empirical literature is yet to characterize the significance of such dissociations, it will be important for clinicians to remain open to their existence. Additionally, clinicians would be well served in attending to them when they are recognized and exploring with patients the particular significance of dissociations in a given case.

Summary and Conclusions

The present study provided additional evidence for the usefulness and generalizability of IAT-derived implicit measures of personality and self-concept. As discussed in Cogswell (2008), it is likely that the momentum that exists in dependency self-report/indirect measurement research cannot be extended easily into other personality domains, due to its reliance on a Rorschach index as the indirect measure. Although the ROD scale has demonstrated acceptable psychometric properties and is generally accepted as a valid dependency measure, even by

Rorschach critics (see Garb, Wood, Lilienfeld, & Nezworski, 2005), the ROD scale is more the exception than the rule in Rorschach assessment. Thus, given the relative difficulty of validating Rorschach indices for any personality variables of interest to researchers, the implicit measures (such as the IAT and SC-IAT) offer a much simpler, more straightforward method of deriving new indirect measures of personality. Headway continues to be made in other, more traditionally psychodynamic fields of inquiry (see Brunstein & Maier, 2005), but as projective measures are not as generalizable, it may prove difficult to sustain the progress currently being made.

In addition to the moderate support for the validity of the implicit dependency measure, the present study demonstrated the usefulness of implicit dependency in predicting a variety of personality and psychopathology variables theoretically related to interpersonal dependency. Most notably, implicit dependency contributed uniquely to the prediction of past major depressive episodes, providing support for the measure's validity and also stressing the importance of examining implicit personality constructs for the purpose of diagnosis.

This research indicates the importance of using both self-report and implicit measures, even when assessing purportedly the same construct. The importance of this practice is likely to be true especially in cases where the construct of interest is considered negative or maladaptive, like interpersonal dependency. One of the primary benefits of administering different classes of measures is that instances of discrepancies between self-report and indirect measures become possible. Much has been written about the potential implications of such discrepancies, and the present

study unfortunately does little to clarify this problem. It is clear that the administration of both self-report and implicit dependency measures allowed for a more comprehensive assessment of individuals' dependency strivings in the present study. What this additional complexity yields is greater specificity in identifying individuals who may have histories of, or be vulnerable to, major depression. This finding is a strong suit of the present study, but again, the study was unable to elucidate a more definitive interpretation of the significance of discrepancies. It was hypothesized that discrepancies were indicative of a defensive process, but this was not borne out in the data. Similarly, it was anticipated that discrepancies may themselves suggest psychopathology, but this was also unsupported in the data. These possible explanations, while not garnering empirical support in the present work, should still be more formally ruled out in future work before being discarded altogether.

The present study's other primary limitation was the failure of the help-seeking task to function as expected. Future work in this area would benefit from finding alternative methods of assessing help-seeking, or alternative behavioral indicators of dependency, as discussed earlier. Another question unaddressed here, but that could be examined in future work, is whether overlap exists between implicit dependency and global self-esteem. An examination of the items that represent *dependent*, relative to those chosen as *independent* words, reveals their obvious negative connotations, and they may tap into a broader self evaluation than was intended. Further, if the implicit dependency measure was actually a self-esteem measure, it is quite possible that the pattern of results would be essentially the same.

In addition to pursuing the generalizability possible using the SC-IAT, it will be useful to consider implicit measures of positive, pro-social personality traits. The majority of the research reported in the literature focuses exclusively on more negative, maladaptive traits (e.g., shyness, anxiety). Although these lines of inquiry are certainly productive and informative, they potentially would be more fruitful if compared to traits with opposing valence.

Finally, the theoretical issue remains of comparing the assessment tools and predictions of social cognitive and psychodynamic researchers. The underpinnings of the two theories' conceptualizations of unconscious processes are certainly different, but the practical methods and hypotheses generated have been remarkably similar. The present study suggests that this apparent similarity is not simply illusory, as a social cognitive implicit dependency measure functioned somewhat similarly to a psychodynamic dependency measure in prior research. It would be most interesting to have a direct comparison of Rorschach dependency and implicit dependency to further dissect their relationship. Only with that examination will we be able to say with more conviction that the measures used by two contrasting theoretical orientations are actually more similar than the theories from which they originated. If this proves to be the case, perhaps it would have value to consider whether the theories themselves are more similar than previously conceptualized.

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APPENDIX A

DEFINITIONS OF INDEPENDENT, DEPENDENT, NEEDY, CONNECTED

Independent: tendency to not be influenced by others, and to not rely on others for support

Dependent: tendency to rely on someone or something else for support or aid

Needy: an immature tendency to heavily rely on others and to be anxious regarding possible rejection

Connected: a mature tendency to value close relationships and be sensitive to the effects of one's actions on others

APPENDIX B

TARGET WORDS AS DETERMINED BY PILOT PHASE 1

Independent

independent

self-reliant

self-sufficient

self-confident

Dependent

dependent

attached

clingy

needy

Needy

needy

insecure

clingy

helpless

Connected

sensitive

trusting

secure

warm

APPENDIX C

INSTRUCTIONS GIVEN IN INFORMED VERSUS UNINFORMED
CONDITIONS (Bornstein, 1998)

Informed condition:

"The purpose of this study is to assess the relationship between dependency and help seeking. The tests you completed earlier were measures of dependency, that is, a person's tendency to look to others for guidance, help, and support in challenging situations. We hope that the results of this study contribute to our understanding of the dependency-help seeking relationship."

Uninformed condition:

"The purpose of this study is to assess college students' problem-solving behavior. We have found that college students use many different approaches when confronted with challenging problem-solving tasks. We hope that the results of this study contribute to our understanding of the mental processes involved in problem-solving."